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A STRATIFICATION OF CULTURES IN EASTERN NEBRASKA

By FRED H. STERNS

A MARKED difference in the character of archeology as treated by the scientists of Europe and those of America has often been noted. The former studied relations of time and the latter relations of space. One considered cultural sequences and the other culture areas. To the European archeologist, peoples of one physical type and one kind of culture were succeeded by another people with different physical and cultural characteristics, and these in their turn were replaced by still other tribes or races. In America, on the other hand, the tendency has been to see all cultures as more or less contemporaneous except so far as the distinction has been made between the historic and the prehistoric. Some American archeologists, however, have believed for a long time that there would be revealed sequences of types on this continent which would correspond in some degree with those in Europe. The proof of such sequences must be grounded on stratigraphic evidence, and stratified sites have been very rare. Hence such a site has a high scarcity value and warrants special study even though it be otherwise of minor importance. Such considerations are the excuse for the present paper on a stratified site in the Missouri valley.

The Walker Gilmore site was named from the boy who gave the information which led to its discovery. His father is a prominent physician in Cass county, Nebraska, and takes considerable interest in local archeology. The boy, following his father's footsteps, found pottery in a gully near the Missouri river. While I was making archeological researches in this county for the Peabody Museum of Harvard University, he informed me of his find and I began investigations in that vicinity at once. Both father and son rendered valued assistance during these researches, and I wish to take this occasion to thank them publicly.

The gully in which the pottery was discovered is situated on the N.E. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Section 28, Township 11, Range 14, in eastern Cass county, Nebraska, on the farm of Mark White, whose father was the first settler on the place. It is about six miles south-east of Murray, eight miles south of Plattsmouth, and a mile and a half south of the former river town of Rock Bluff. In this vicinity considerable archeological work has been done in the last two seasons. A University of Nebraska party, under the direction of Mr Robert F. Gilder of Omaha, discovered about sixty skulls within the Plattsmouth city limits. Dr G. H. Gilmore of Murray excavated one earth-lodge site near Rock Bluff and collected surface material from several other places in the county. Our party worked in the vicinity for about five weeks last year and a similar time this year. Four miles south of the farm of Mark White we excavated two of the semi-subterranean rectangular earth-lodge sites such as I described in a recent number of this journal.¹ These sites furnished a great abundance of potsherds, and many flint and bone implements. Several more of these sites are known to exist within two miles of the White farm.

The gully in which the finds were made forms the upper portion of the course of an intermittent stream. The lower portion of this stream's course is through an alluvial terrace of the Missouri river. This terrace is now about a quarter of a mile wide and sufficiently raised above the present level of the river to be out of reach of even the highest water. It is separated from the flat through which the gully runs by an old river bank about eight feet high. This flat forms an east-and-west gap between two high river bluffs to the north and to the south of it. Its greatest width from slope to slope is about a quarter of a mile.

The stream formerly had a winding southeasterly course across the alluvial terrace; but the owners of the property diverted the creek a few years ago by digging a drainage ditch almost due eastward. The great shortening of its course thus produced has caused it to cut the gully which it now occupies. This gully averages about 30 feet in width and 20 feet in depth, and has almost vertical walls.

¹ *American Anthropologist*, XVI, 135-7.



1. LOOKING EAST TOWARD THE WALKER GILMORE SITE. THE LIGHT-COLORED FIELD WHERE THE FARM IMPLEMENT STANDS IS THE PLACE WHERE THE RECTANGULAR HOUSE SITE POTTERY WAS FOUND. THE TREES NEAR IT ARE ON THE BANKS OF THE GULLY IN WHICH THE ASH-BEDS ARE FOUND



2. A POCKET OF DUMPED ASHES OCCURS IN THE CENTER OF THE DARK BAND OF CREEK MUCK. TO THE LEFT IS A LAYER OF CREEK GRAVEL CONTAINING SOME CHARCOAL

In places its sides and bed are composed of a yellow loess-like clay similar to that which forms the neighboring river bluffs, while in other places it cuts through deposits of blue "gumbo" clay, such as is common in the creek beds of the region, or through creek gravels, or through secondary loess such as could occur only as wash from the hills. The distribution of these various materials in the gully and for some distance in its banks (as determined by boring with a long auger) makes it clear that the present stream is cutting across the course of an older stream whose channel was wider than that of the present creek. The banks of the older stream valley had a much gentler slope than those of the present gully, and its course was not the same as that of the present stream. Where the latter cuts the old channel, the gully walls consist of "gumbo" clay, gravel, or secondary loess. Where it does not cut the old valley, the walls are the original yellow clay.

These deposits of the old stream and the material which has washed from the hills and buried them contain traces of human occupancy at various levels. In the first place, on the flats around the gully there are many fragments of pottery and a few flint implements. This pottery is of a brownish or grayish color with no surface luster. It is commonly of the form of a pot of medium size. About ten percent of the rim fragments show signs of the presence of lugs. A marked characteristic of this pottery is the almost constant presence of a sharp angle where the body of the pot meets the vertical or reflex rim. About half this pottery is without decoration, while the decoration of the remainder consists mainly of thumb impressions on the rim, varied now and then by the impressions of some sharp implement. This is the typical pottery of the rectangular earth lodges. None of these lodges was actually found on this flat; indeed one could not expect to find them, as the field has been plowed since 1857 and all traces of them would have been destroyed in that length of time. It is important, however, to know in a general way the position these lodges originally occupied. Were they on the flats which cover the bed of the old stream where the pottery fragments are now found, or was they on the hills and has the pottery been washed to its present position on the flats?

The following considerations make me feel certain that the lodges stood where the pottery is now found rather than that the latter has been washed from the hills. Portions of the hilltop have only recently been cleared, and when I was there they were newly plowed. All lodge sites which had ever existed there should still be discernible; and if any pottery was there to be found, the conditions for its discovery were the most favorable. But we could neither locate an earth lodge nor find the smallest potsherd. On the slope of the hill, at two different heights, strips of ground had been plowed and were in excellent condition for surface work, and yet no trace of aboriginal occupancy occurred in either place. Where the slope of the hill meets the flat and the velocity of the surface drainage waters would be checked is the natural place for wash of all kinds to be caught; but no pottery could be found there. Even the flat itself is devoid of pottery to a considerable distance from the hill slope. Such pottery as there is on the flat is bunched in two or three places with no regard to drainage lines. If the potsherds were washed from the hills, nearly as much would be found in the gully as on the flats nearby, whereas there is actually very little of this type of pottery in the gully. If it washed from the hills there should be much of it on the alluvial terrace, which is now receiving wash; but, instead, it is absent there. Only one conclusion seems possible in regard to the former location of these rectangular earth-lodge sites, and that is that they stood where the pottery now is, and since they rest upon the deposits over the old stream channel, their age is less than the filling of that channel.

Four feet below the surface of the gully there are occasional traces of charcoal in the secondary loess. This would seem to indicate that either the flats themselves or the hills above them had some human occupant at the time this portion of the deposit was forming. But as no artifacts were found at this level and as charcoal is a very unsafe basis from which to draw any conclusion in regard to human occupancy, the presence of man at that stage cannot as yet be proved. And if man lived there, nothing can be said of his culture.

Six feet below this, or ten feet below the surface, there occur



1. A BED OF ASHES WITH ANOTHER BED OF CHARCOAL ABOVE IT, THE TWO FORMING THE REMAINS OF A FIREPLACE



2. BY THE MAN'S KNEES IS THE LOWEST LEVEL OF FIREPLACES. THE SPOTS OF ASHES ABOUT THE LEVEL OF HIS WAIST SHOW THE SECOND LAYER. TRACES OF CHARCOAL WERE FOUND ABOUT THE MIDDLE OF THE HANGING ROOT. THE RECTANGULAR HOUSE TYPE POTTERY OCCURS NEAR THE SURFACE HERE

numerous ash-beds, and in a few places there are still other ash-beds two feet below the first group. These two layers are separated by a blue creek muck which probably did not take a great deal of time to accumulate. An important fact arguing against any great difference in time between the upper and the lower ash-beds is that the pottery and the flint and bone implements found in these two sets of fireplaces show absolutely no difference in type.

They differ, considerably, however, from the material found on the surface. The pottery is mainly of a blackish color and lacks entirely the sharp angle found at the neck of the surface pottery. It is usually decorated by finger-marks on the rim, but some pieces are cord-marked (I have no specimen of cord-marked pottery among the 1300 rims collected in the rectangular earth lodges). None of the fragments shows evidence that the vessels had lugs. Among the animal bones, those of the bison were the most common, while they are rare in the rectangular house sites. Charred corn is quite common in the earth lodges, but none of it was found in the fireplaces. Instead there were large numbers of gourd or squash seeds which have never been found in the other sites.

These lower sites have been traced for an eighth of a mile in a straight line along the creek. Borings show that the traces of human occupancy extend in places at least fifty feet back from the present walls of the gully. This argues either for a considerable number of persons in the settlement or for an extended occupancy. In many places along the creek but one of the layers of fireplaces occurs, and in these cases it is impossible to tell which layer is absent. In addition to the fireplaces, or ash-beds, there occur a few ash-dumps and an occasional pit. The artifacts which were found were nearly all broken fragments. No trace was found of deliberate storage of material.

Each place along the gully where the beds containing the fireplaces were found was given a number. These numbers ran from I to IX, and counting the lettered exposures between numbers, there were seventeen in all.

A typical section from top to bottom follows. This was taken on the southern end of exposure VII.

	FEET	INCHES
(1) Black organic soil.		11
(2) Yellow clay much jointed. At a depth of four feet it contains traces of charcoal. Secondary loess.	6	9
(3) Light-colored clay with numerous dark bands. . . .	1	2
(4) Dark-colored clay with numerous light bands. . . .		11
(5) Light-colored clay with dark bands.	1	
(6) Dark layer containing rocks, charcoal, ashes, and artifacts.		5
(7) Light-colored clay with dark bands.	1	
(8) Ashes.		1
(9) Burned clay.		2
(10) Dark, unbanded clay.		

The question remains as to the age of these deposits. There are boxelder trees growing on the edge of the gully, immediately above ash-beds, which are eight feet or more in circumference. Other trees of still larger size grow along the gully but not immediately above the beds under discussion. The most important consideration in gauging the age of the deposits is that the material on the surface is entirely prehistoric. Not only in these particular sites, but in all the hundred or more of the rectangular house sites which have been examined, traces of contact with white people are altogether absent. The following is the series of events which has taken place. First, an ancient people made their homes in an old creek bed. They temporarily abandoned the site and later returned to reoccupy it. Then there followed the slow filling-in of the valley, a process which took at least two or three centuries. Then another people with another culture occupied the site. And finally either they changed some elements of their culture (such as the rectangular semi-subterranean lodge) before the coming of the whites or else the historic tribes form a third group of people to occupy the same region.

There is nothing in the cultural changes nor in the stratigraphic conditions to indicate geological antiquity. A thousand years is ample to account for all the phenomena, and the lowest beds may not be even so old as that. However, we must be careful to avoid the other danger of making our estimate too low. Wash from the hills would be very slow compared with the deposits of river flood-

plains. Sites buried in the latter might not be very old. Such sites have been found within two miles of the White farm. They consist of fireplaces at a depth of two to three feet in the river alluvium. They contain a type of pottery which is different from either that of the Walker Gilmore site or that of the rectangular lodge sites.

A detailed study of the different cultures is now being prepared and will be published later.

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